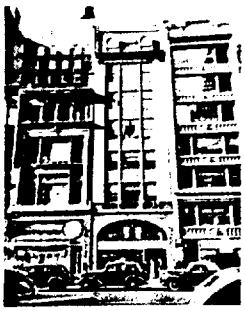

Think

(IBM)

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The year of the gifted children

They came, mostly by subway and mostly from tenements, to a lab fashioned by IBM out of confidence in them.

by Harrison Kinney

"I've just returned from Cornell University," Linwood McDaniel of IBM's headquarters staff in Armonk, told us over the phone. "I was conferring with Dr. Irving Lazar, a child psychologist and a leading designer of social programs with The New York State College of Human Ecology.

"Lazar specializes in child development and is worried about one aspect of public education: It isn't constructed to locate and encourage the talent that is in such short supply today. But here's the surprise: To illustrate the point, he mentioned that he was one of nearly 60 'gifted' children, ages 14 to 17, who spent much of 1941 after school hours in a laboratory IBM fitted out for them above our former showroom on Fifth Avenue.

"Two of those kids are Nobel laureates today, and some of the others are in *American Men and Women of Science.* Maybe your readers would be as curious as I to learn more about the year IBM hosted bright science students."

The company's archives scarcely mention it, but Dr. Lazar was able to put us onto the lab's former director, Dr. Henry Platt, who heads Career House, a Devereux Foundation institution in Devon, Pennsylvania, that educates talented youth with personal problems.

The story, Platt told us, began in Octo-

Henry Platt: "He was so distinguished-looking, I automatically asked if I could be of help. I didn't learn until later that he was Thomas J. Watson Sr., IBM's founder."

Anthony Iannone: "Besides learning lab discipline, we helped one another fulfill our intellectual aspirations. One reason I felt isolated in private practice, I missed such interaction."

ber 1940, when the New York World's Fair was drawing to a close. Platt had worked with gifted science students in Boston and was asked by The American Institute of the City of New York to supervise its Junior Hall of Science, at the Westinghouse exhibit. (The Institute, on Long Island, still sponsors fairs at which projects of science students are exhibited.)

One day, a distinguished-looking man entered the Westinghouse pavilion, pushed a few of the buttons on the bank of wall exhibits, studied some of the work of the "junior scientists" and asked Platt what it was all about. Platt explained that, over the fair's two years, the Institute and Westinghouse had given space to 1,800 bright science students to exhibit their work and pursue experimentation. The distinguished stranger asked:

"Couldn't this be considered exploiting these students for commercial purposes?"

"Not at all. Westinghouse and the Institute are promoting scientific talent among the young as a public service."

"What will happen to all this equipment after the fair?"

Platt sighed. "Probably local schools will get it."

"You don't favor that?"

"I'd like to see the lab continued, but in private—and made available to gifted children within 20 miles of Times Square, so they could get to it easily after school."

"What would that cost?"

"I don't know. It's just a dream of mine."

"Who would supervise the students?"

"I would."

"You couldn't be qualified to supervise every kind of science and discipline."

"I'd find the qualified people. A number of them are on the board of the Institute."

"Would such important people be willing to bother with these young people?"

"I'm sure of it."

"That's interesting. Your dream about such a lab is a noble one."

Platt never saw the man again, nor did he know until later that he was IBM's founding father, Thomas J. Watson Sr. The next day, two men from IBM visited Platt to ask about continuing the lab.

"I pointed out that IBM's fair exhibit featured art," Platt said. "Why was Mr. Watson interested in continuing a science lab? They said it was characteristic of Watson to be interested in art one day and science the next."

Getting underway

Platt was hired by The American Institute to operate the lab in IBM's showroom building at 310 Fifth Avenue, largely with funding from Westinghouse. "IBM outfitted two floors impeccably," Platt said. "New plumbing and wiring. Storage cupboards. A chemistry storeroom and lab. A photography darkroom. Tools for constructing equipment. Adult supervision always. Safety was paramount. Big letters indicating which outlets were AC and DC.

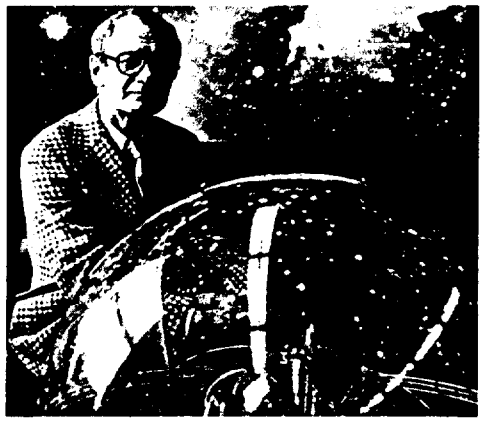
"I don't know how they got Westinghouse's 'How Radio Works' exhibit through the windows of that IBM building. It took most of a wall when it was reassembled."

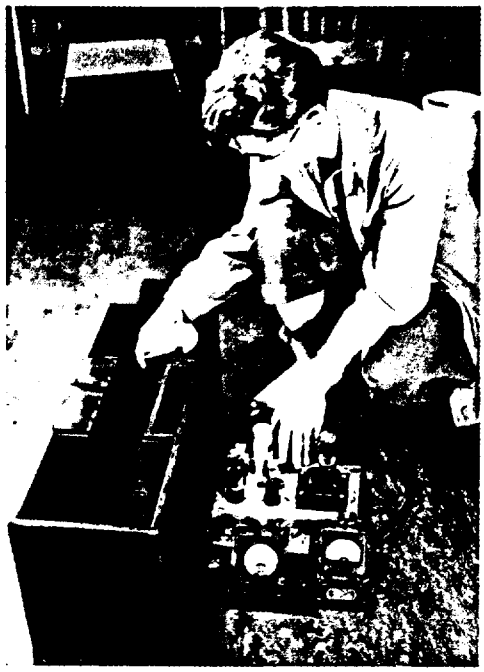
Platt hadn't been satisfied with the method for choosing science students to staff the Institute's lab at the fair. "Many were children being rewarded by their teachers for behaving well and working hard," Platt said. "I wanted the bright ones who could make fools of their teachers; the ones so bored in class they might even be considered troublemakers. Yet, serious-minded and able to know a good opportunity when they saw one.

"To qualify for the lab at IBM, applicants had to spell out specific projects they wanted to pursue. The Institute solicited applicants through newspaper ads and their own science clubs in the New York area. The IBM location was ideal. It was on Fifth near 32nd Street, which meant most of the kids could get there on the subway for a nickel, from all the boroughs. Of 2,000 applications, we selected 60."

Research directors from industry volunteered to oversee the students' work. They were introduced at the lab dedication luncheon held by Watson at IBM's World Headquarters at 590 Madison Avenue. The president of The American Institute warmly thanked Westinghouse and IBM for making possible "the first research laboratory where young scientists can work independently and at no cost to them."

Robert Jastrow: "I trace my career as physicist to those weeks at the IBM lab. My project there, with white mice, led to a job with Professor Fred Keller of Columbia."





Many of the students, now in their mid-50's, have vanished into anonymity, but a remarkable number are, today, distinguished biologists, chemists, research physicians, physicists and engineers. One, Dr. Joshua Lederberg, president of The Rockefeller University, received the Nobel Prize by age 33 for his studies of heredity.

"I was once asked to endorse a program for student science fairs," Lederberg told us. "I had to tell the organization I had never exhibited at such a fair but that I'd been fortunate in having been included in what I thought was a more effective means of developing young scientists—the student science lab at IBM. We were a busy group of kids at that lab. I've stayed in touch with a number of them, and we remember that year fondly and with gratitude. There's no one I knew there who didn't benefit."

"A smashing group"

"They were a smashing group of achievers," Platt added. "Robert Jastrow heads NASA's Goddard Space Center in New York, writes on astronomy and teaches at Columbia and Dartmouth. Baruch Blumberg was made a Nobel laureate for discovering the causative agent in hepatitis. Jordan Prince, a kid from the Bronx, developed a radar system that identifies friendly and enemy aircraft at night, a system that was modified by industry and used by the military in World War II. Roy Glauber, 15, built his own spectroscope and microcamera and used them to make original studies in physics. Roy attended the Bronx High School of Science."

So did Charles Yanofsky, who talked to us by phone from Palo Alto, California, where, as a biologist at Stanford University, he is known for exotic experiments in genetics. "As good as the school's facilities were," he said, "we found the student lab at IBM a grand opportunity. It had equipment, professional guidance and an atmosphere no public school could match. Whether we took the bus or subway, the trip to the lab seemed to take forever, we were so impatient to get there. I was inducing mutations in fruit flies with ultraviolet light. Being able to create our own projects was especially important to us."

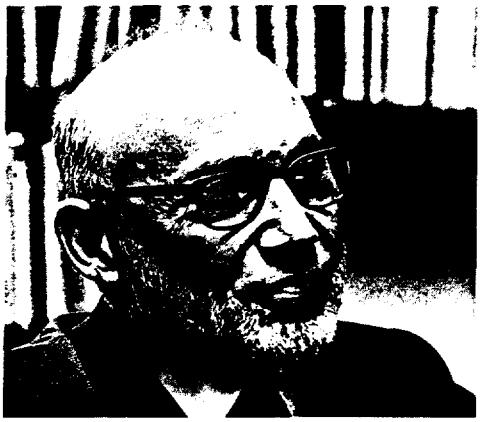
"Subways were a way of life with most of us," said Dr. Anthony Iannone, speaking from Toledo, where he is co-chairman of the Department of Neuroscience at The Medical College of Ohio. "You didn't go to the high school nearest you if you could qualify for one better suited to your interests. I lived in Corona, Queens, and Josh Lederberg lived in the Bronx, but we both went to Stuyvesant High in Manhattan because it was strong in science, especially biology. The problem was, most of us were poor and our families could only afford to give us 10 cents for the round trip between home and school. So Josh and I, two 15-year-olds, had to walk from Stuyvesant, 21 blocks to the lab. As much as anything, we resented the time it took. I was making histology slides of a frog's brain and nervous system, and nothing seemed as important to me."

Dr. Irwin Arias, who specializes in liver disease research at the Albert Einstein College of Medicine at Yeshiva University, told us that his greatest gain from his year at the lab was in self-confidence. "It was a much larger world then than now," he said, "one made for exploration and independent study. But it was an uncertain world, with Europe at war. All at once we were invited into the company of adults—professionals who fussed over us and took our work seriously. We gained in self-belief.

"I kept a number of close friends from those days at the IBM lab. Henry Platt, the director, was my best man when I married. I had lost touch with Barry Blumberg until about eight years ago, when he was to lecture at the college here. Because I was in a somewhat related field, I was asked to introduce him. Barry hadn't been made a Nobel laureate yet, but reading his biographical notes in preparation for his introduction, it occurred to me that he had been at the lab with us.

"I consulted my attic and, sure enough, there was a poster listing me as master of ceremonies, who would introduce Barry to a group of science and business leaders attending one of our periodic presentations. Barry had won an award for using sulphur dioxide as a refrigerant, freezing

Joshua Lederberg: "I was fascinated by the electromechanical machines at IBM's showroom downstairs. I learned all I could about them. Eventually, that led me into computer science."



water in an apparatus he had made himself. I, a 14-year-old, had been asked to introduce Barry, a 15-year-old, and the other winners because I had the gift of gab.

"So when I stood before my colleagues at Einstein to introduce Barry 30 years later, I said, 'It seems that one of my purposes in life is to keep introducing Dr. Blumberg,' and I held up the poster. Barry looked at me as if I were crazy. Then he looked at the poster and recognized me for the first time. If I surprised him, he surprised me. He embraced me. It was an emotional moment. We've been close friends ever since."

More brains than means

Dr. Irving Lazar, at Cornell, listened thoughtfully to this story. "You have to understand who we were," he said, "to understand what that year at the lab meant to us. We were Depression kids, children of poor European immigrants, for the most part. Russians, Irish, Poles, Germans, Italians, Swedes. Our parents had fallen on hard times in the old country. Some had menial jobs because they didn't understand English well and had no money to start a business of their own. They saw education as the best way for their children to avoid the poverty they knew.

"A few of the kids came from comfortable homes, and even had a lab at home. But most of us lived in the tenement districts, and I can tell you we were motivated youngsters being pushed by motivated parents. The public schools simply weren't adequate for us. The lab was an opportunity beyond our wildest dreams. Not all of us had carfare or lunch money, and Henry Platt was father to us all."

Platt was pleased by the designation. "It took me a little time to realize that when some of the kids said they weren't hungry at lunch time, that they couldn't afford to eat away from home," he said. "I made sure they had a nickel for the subway and something in their stomachs. I drew from The American Institute's operating fund."

Platt's bills went to Robert Light at The American Institute. Light, now retired, lives in Nyack, New York.

"I had occasion to go through some of the lab expense files not long ago at The New York Historical Society," Light told us. "The accounting departments of both Westinghouse and IBM would have been puzzled by some of the bills for frogs, white mice, chicken feed and guitar strings —somebody made one of the earliest electronic guitars at the lab, it seems. I remember Platt had to buy onions for one of the boys. I never figured that one out."

"That was for Josh Lederberg," Platt explained. "He was into cell structures and needed to stain the fine membranes of onions for study under a microscope.

"Josh had a special problem. His family was orthodox Jewish and wouldn't let him come down from the Bronx on Friday evenings or Saturdays. He was so disappointed that I made arrangements with IBM to open the lab for him on Sundays. IBM saw to it that the elevators were running and that the building and lab were supervised. Watson had left word that these youngsters were to be treated as honored guests of IBM. In return, we made certain that the students we selected were not only talented but serious-minded and considerate, worthy of the privilege. They followed the safety rules religiously, and not one item was ever taken from the lab.

"As it was, we must have worried the people in the showroom downstairs. Laboratory animals were always escaping and had to be caught. Hens laying eggs cackled incessantly. Roosters crowed. I could only assume the poor IBM people in that fancy, wood-paneled showroom, featuring the latest IBM machines, were reassuring the customers who asked about all the noise upstairs, that they were imagining things."

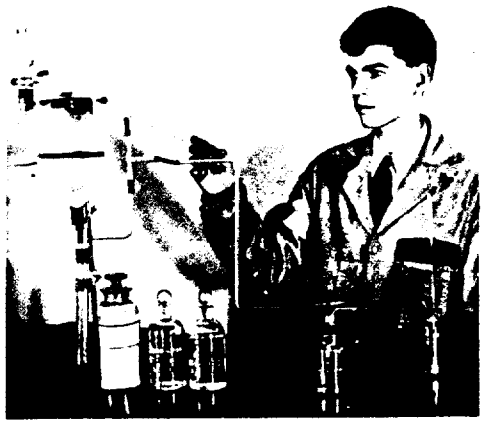
They weren't all boys

Ten percent of the students were girls. One developed a new line of cosmetics and was hired by a cosmetics firm at a surprisingly young age. Another specialized in mushroom culture and made a model of the human brain. Still another found a way to plate plastic with copper.

Platt said he is reminded of those days whenever he reads about the present-day accomplishments of the students.

"Take Josh," he said. "His Nobel Prize.

Baruch Blumberg: "My year at the lab reconfirmed my dedication to science. All the support and encouragement gave us positive feelings about science as a career."



The active role he played in NASA's Mariner and Viking missions to Mars. His work with the Government in mental health and retardation. And, I think, what if that IBM lab hadn't been made available to him on Sundays? What if I hadn't taken his request for an onion seriously? Would his progress toward greatness have been fatally interrupted?"

"That's not farfetched at all," said Dr. Lazar at Cornell, when told of Platt's remarks. "In 18th-century England, Thomas Grey, in his 'Elegy Written in a Country Churchyard,' meditates on how many buried in that cemetery might have been another John Milton, or a great statesman, if given the opportunity. We thought we'd taken care of the problem with public, mass education. Bright kids will always emerge from the crowd, it was believed. That's rubbish. They have to be identified and helped. We were among the lucky youngsters. We benefitted from that dream of Platt's and Watson's."

Lazar's project at the lab—growing plants without soil, in water supplied with nutrients—was adopted by the Army.

Eric Svaigsen, an engineer, is director of a ship-repair firm, which carries out repairs at sea. At the lab he helped another student build an oscilloscope that received TV test patterns from the RCA building. It was a weak signal in those days of television's infancy, and the boys had to put an aerial on the roof of the IBM building, as well as hang one out the window. Taking our call in his New York office, Svaigsen added: "My real pleasure was helping build equipment for the kids I knew were geniuses. A Columbia University instructor taught a half-dozen of us glass-blowing techniques. We were able to make our own lab equipment—items you can buy off the shelf today, but often didn't exist at that time. I'd take off every afternoon from William Cullen Bryant High School in Long Island City, take the subway to Macy's at 34th Street and run the several blocks to the IBM lab. I felt part of something very special.

"It would be nice to be with those people one more time. There was something electric about them. Something rubbed off; something you could take home with you."

Subways were for reading

"I know what Eric means," said Iannone in Toledo. "It was more than learning lab discipline and getting more deeply hooked by research and scientific possibilities. In many ways, the most sophisticated of us were still unsophisticated, and we knew it. We helped one another set standards of intellectual aspiration. We talked together on subways and during lunch hours. We exchanged books. I was loaned my first Aldous Huxley books. The social interaction was very important. Maybe that's why I felt a bit isolated when I practiced for a couple of years. I had been conditioned to interacting with others, as we had at the lab."

According to Platt, IBM stored aborted engineering projects elsewhere in the building and told Platt the students could use anything in the junkroom they found.

"One project," said Platt, "was some kind of electromechanical machine with long tapes with holes in them. I understood that the machine had lost out to a better product IBM had decided to go with. A kid named Martin Rosenberg found the aborted project and improved on it in some way. The place was suddenly flooded with IBM engineers looking at what Martin had done. Martin's father was summoned. As I remember, IBM wanted to hire Martin on the spot as an engineer, but Martin was only 15 and his father felt he should go to college. One engineer suggested that anything Martin learned in college could only make him mediocre. But the father prevailed. I think Martin shared in patent rights, or something. I'm sure IBM treated him fairly."

We told the story to Robert Light, who remarked: "It proves Watson's theory. Watson told Dr. Sheldon, managing trustee of The American Institute of the City of New York, when the lab was being set up, that he foresaw those students as an invaluable resource to industry and to the country. He felt the country was lagging in research and technology. He was on the right track, and it's a shame that World War II put an end to a start of something

that might have led to even greater things."

But with Pearl Harbor, the lab, begun February 1, 1941, was closed to make room for IBM's defense work for the Government.* The huge Westinghouse "How Radio Works" exhibit was dismantled, lowered out the windows by crane and loaded onto an Army truck that took it to Fort Monmouth, New Jersey, to be used to train Signal Corps recruits. Most of the other equipment was given to schools.

"Nobody wanted the huge lab tables," Light said. "They were going to be thrown away so I arranged to have one taken to my summer home in Austerlitz, New York. It's still there, an island counter in the kitchen. It's hard-rock maple and indestructible. My wife and I refer to it as 'the IBM counter.'"

The chickens were given to an agricultural school on Long Island. "It was a sad day when I made my last visit to the lab and said good-bye to the hens and roosters," Lazar told us. "They had loyally produced eggs for me which I put in incubators, to develop embryos for genetic experimentation. I was trying for a breed of chicken with more white meat.

"I wasn't able to eat an egg after that until I was 30 years old. The chickens had become pets. They had names. I kept them on the roof of the IBM building in summer and downstairs in winter. When I went into the Army, I'd look at the scrambled eggs in the mess hall and wonder if those lab chickens were making a successful transition to a barnyard environment.

"After all, they'd led a very pampered life at IBM's swankiest address—on Fifth Avenue." ■

** IBM, with other corporations, has continued to contribute to The American Institute in its efforts to develop budding scientists.*